

Technology Deployment Initiatives and Partnership Program

Request for Funding FY 2005

FHWA Strategic Goal Area: Productivity; Safety

Focus Technology: Geographic Information System; Non-Destructive Technologies

Project Title: Digital Highway Measurement (DHM) Technology

Problem Statement: Surveying existing highways for planning and design purpose requires a significant amount of resources. Typical project identification (scoping) exercise for a proposed FLH project costs up to \$50,000. Majority of this work involves creating a road log; identifying signs, utilities, culverts, and structures; cataloging road geometry; and identifying significant features of the highway corridor. Many of these tasks can be accomplished in an automatic fashion by utilizing the Digital Highway Measurement vehicle currently under development at TFHRC.

In addition, the NPS Road Inventory program currently uses the ARAN vehicle that uses relatively outdated technology. The Forest Highway Inventory Program and Indian Reservation Roads Inventory Programs are also looking for automated digital highway measurement technology. The proposed DHM vehicle can also accomplish these tasks.

Proposal: It is proposed to collaborate with TFHRC Advanced Technology Group to deploy this technology for FLH project identification reports, Road Inventory Program, and GIS data collection. A new digital highway vehicle will be designed to meet FLH needs. This DHM vehicle will be used among the FLH divisions and its partners. The DHM vehicle will contain the following sensors: INU, GPS, GPR, Scanning Laser, Stereoscopic Cameras, Five Lasers, Three Accelerometers, Temperature gage, On-board Computers. The DHM will also contain Data Acquisition software, Data Viewing software, Data Analysis software, including, geometry, image processing, Ground Penetrating Radar processing, Pavement Surface Analysis, Data Visualization software. The final training module will include documentation on Software, Hardware, Maintenance, and Operations.

Benefits: The use of DHM vehicle will results in significant cost saving during preparation of project identification reports, road inventory programs, as-built data collection, pavement conditions, and sign inventory. In addition, the data collected by the DHM vehicle can be incorporated into the GIS system.

Resources/Cost: The total cost for this deployment and evaluation period will be \$850,000.

FY2005	\$200,000
FY2006	\$375,000
FY2007	\$275,000

Duration: March 2005-September 2007

Organization/Method: The DHM vehicle will be developed at TFHRC and will be deployed

at all three FLH divisions.

Submitter:

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